



GARY R. HERBERT
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Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

February 8, 2017

Dan Baker, President
Bronco Utah Operations, LLC
P.O. Box
Emery, Utah 84522

Subject: Conditional Approval of Phase II additional Permit Area, Bronco Utah Operations, LLC, Emery Deep Mine, C015/0015, Task #5362

Dear Mr. Baker:

The Division hereby conditionally approves your application for adding the Phase II additional Permit Area amendment. The Division finds that Bronco Utah Operations, LLC has met the regulatory requirements and approves this amendment, although you cannot operate in this area until the bond is posted and a revised permit is issued. A revised permit will be issued once we have received the updated original bond documents. At this time, please submit 2 clean copies of the amendment to the Division, by no later than March 8, 2017. The clean copies should include professional certified stamped maps with the boundaries of the proposed areas updated and designated as approved areas. A stamped incorporated copy of the approved plans will be returned to you for insertion into your copy of the Mining and Reclamation Plan.

A copy of our technical analysis is enclosed along with the proposed permit and conditions for your information and review. If you have any questions or need further information, please call me at (801) 538-5325.

Sincerely,

Daron R. Haddock
Coal Program Manager

DRH/ss

Enclosures

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Technical Analysis and Findings

Utah Coal Regulatory Program

February 8, 2016

PID: C0150015
TaskID: 5362
Mine Name: EMERY DEEP MINE
Title: PHASE II ADDITIONAL PERMIT BOUNDARY

General Contents

Identification of Interest

Analysis:

Analysis:

The application meets the requirements of R645-301-112.800, because Appendix 1-2 contains current surface land ownership within and adjacent to the permit area. Adjacent surface and subsurface ownership is portrayed on Plate 1-1. The Permittee's interest in adjacent lands corresponds to Bronco's ownership of adjacent coal as shown on Plate 1-1 (personal communication with John Gefferth, December 13, 2016).

pburton

Right of Entry

Analysis:

The amendment meets the State of Utah R645 requirements for Right of Entry.

The previous technical reviews identified a deficiency relative to Right of Entry (Task ID #5299 and #5350). Plate IV-2, UG Operations Plan, depicts the proposed 5-year mining sequence for the mine expansion. Upon review of Plate IV-2, it's clear that mining activity will occur within Federal Lease U-5287 within that 5-year timeframe. Based on conversations with Bureau of Land Management (BLM) personnel, the Permittee has not revised the Resource Recovery Preservation Plan (R2P2). A revised R2P2 is required by the BLM prior to mining activity (as depicted in Plate IV-2) occurring in Federal Lease U-5287.

Per the requirements of R645-301-114, the deficiency required the amendment to contain a description of the documents upon which the applicant bases their legal right to enter and begin coal mining and reclamation operations. The description was to identify the documents by type and date of execution, identify the specific lands to which the document pertains and explain the legal rights claimed by the applicant. The Permittee was directed to revise the amendment to comply with R645-301-114.

Based on discussions with the Permittee, the BLM and Division management, it was agreed that the deficiency could be adequately addressed by providing a commitment in the MRP that the R2P2 would be revised the mining of Federal Coal in Lease U-5287 as depicted on Figure IV-2.

In Chapter 1, page 7A and on page 7 of Appendix I-2, the Permittee indicates that they will initiate the R2P2 modification in January 2017 and will endeavor to provide the Division with the documentation of the modified R2P2 by December 31st,

2017. A commitment has been added to the Annual Report for the Emery Deep Mine. The status of the R2P2 revision will be revisited with the review of the 2017 annual report submitted by the Permittee.

schriste

Reporting of Technical Data

Analysis:

Analysis:

The application meets the requirements of R645-301-122, because all referenced technical reports including Appendix IV-13 (Emery Expansion Civil Design Drawing - R & M Engineering Consultants) are included in the application.

pburton

Reporting of Technical Data

Analysis:

The amendment meets the State of Utah R645 requirements for Reporting of Technical Data.

R645-303-224.100 requires that an "increase in the size of the surface or subsurface disturbed area in an amount of 15%, or greater, than the disturbed area under the approved permit..." must be processed as a Significant Permit Revision. Based upon previous reviews/analyses of the disturbed acreage currently on-site at the Emery Deep Mine and the approved bonding calculations for the site, it was determined that the Permittee must determine must survey the disturbed acreage associated with the currently approved Emery Deep Mine facility in order to determine whether the proposed mine expansion must be processed as a Significant Revision.

The question as to the actual disturbed acreage at the mine site was raised upon review of currently approved language and acreages provided in the existing Mining and Reclamation Plan (MRP). For example, Table III-1, Surface Operations Area Pre- and Post-Mining Land Uses identified 375.8 acres as "potential surface operations area". This area was determined to be associated with a proposed wash plant area that was never constructed or bonded for. The Division determined that this acreage could not be utilized in determining whether or not the proposed mine expansion (and associated disturbed acreage) constituted a 15%, or greater, addition of disturbed acreage.

The Permittee has submitted revised calculations of disturbed acreage in Table III-1 as well as revising Plate III-9, Permit Boundaries and Bonding Map (Exhibit D).

The previous analysis (Task ID #5390) directed the Permittee to provide the names of persons or organizations that collected and analyzed the data, the dates of the collection and analysis of the data, and descriptions of the methodology used in determining the existing disturbed acreage as well as the disturbed acreage of the proposed expansion for inclusion into the Mining and Reclamation Plan (MRP).

On page 2 of Chapter III, the Permittee discusses the process, methodology and personnel who conducted the investigation/field verification of the disturbed area. The Permittee utilized third party consultants. Patrick Collins, PhD., Mt. Nebo Scientific conducted preliminary field verification by identifying physically disturbed soils and where invasive plant species have begun to appear. The disturbed acreages were then surveyed by a Utah registered Professional Engineer and registered Land Surveyor (license number 4940688) by utilizing a Trimble R8, survey grade, RTK, GPS/GNSS system with a TSC3 data collector.

schriste

Maps and Plans

Analysis:

The amendment meets the State of Utah R645 requirements for Maps and Plans.

The previous technical analysis (Task ID #5299 and #5350) identified a deficiency with the maps and plans that were presented in the amendment. The Permittee was directed to revise all maps/plates that depict the permit boundary and/or disturbed area boundary to reflect the proposed mine expansion. An example of figures that required revision, Plate VI-3, Plate VI-9 and Plate II-1A did not identify the proposed mine expansion.

Upon review of the amendment, the Permittee has revised the plates in Chapter VI that depict the permit boundary and area adjacent to mine. The exception is Plate VI-3. Plate VI-3 was generated by the State of Utah Water Rights division. The plate depicts water rights within the existing permit area and adjacent area (including the proposed mine expansion). As the State of Utah agency produced this report, the Permittee is unable to revise it. Although an outdated permit shape-file is

utilized, the water right information is accurate and required information that must be included in the MRP. As such, the Division is not requiring a revision for this plate at this time.

schriste

Environmental Resource Information

General

Analysis:

Analysis:

The application meets the requirements of R645-301-521, General Operation Plan, because the disturbed area boundary is clearly presented on Plates IV-8 series a and on Figure 3 Appendix B of the Soil Survey. The surface disturbance will encompass 10.3 acres (Table III.2). Cross section locations and cross sections are shown on Plates IV-b and IV-c.

The permit area is described as 444.8 acres as shown on Plate III-9, Permit Boundaries and Bonding Map. The proposed Emery 2 Expansion is 29 acres (MRP Section UMC 782.17*). This surface expansion in T22S, R6E Section 32 and 33 will allow access to fee coal on the West and North of the permit area, owned by Bronco (Surface and Coal Ownership Map, Plate 1-1) and to federal coal (Fed Lease U-5287) on the North West and North of the permit area, refer to Plate IV-2 Underground Operations.

A box cut and fill of an ephemeral channel is required for development of three new portals and a 700 ft. long conveyor. The portals will be at the bottom of a ramp (10% grade) in a box cut. Two bypass culverts (UC1 and UC2) will collect undisturbed drainage past the site. Plate II-1 shows the surface facilities which include a 100,000 gal water tank, 16 ft. diameter raise bore ventilation shaft, 4 boreholes (120 ft. deep) for water and power, and 18 poles to support the power line. Half of the conveyor length will be elevated on a metal framework.

*The application references the UMC code from the Utah interim program, rather than the Utah Coal Mining R645 Rules which were implemented in 1987. These references should be updated with the corresponding R645 Rules in each heading of the application.

pburton

General

Analysis:

The amendment meets the State of Utah R645 requirements for General Operational Plan Requirements.

The previous technical analyses (Task ID #5299 and #5350) identified a General Information deficiency relative to Hydrology. The Permittee was directed to provide documentation that the U.S. Army Corps of Engineers has found that the proposed mine expansion qualifies for a Programmatic General Permit 10 (PGP-10) permit. R645-301-731-751 requires compliance with the Clean Water Act (33 U.S.C. 1251 et seq.).

The Utah Division of Water Rights Stream Alteration Program Information Page states, "The U.S. Army Corps of Engineers issued Programmatic General Permit 10 (PGP-10) which allows an applicant to obtain both state approval and authorization under Section 404 of the Clean Water Act through a single application process. Although not all stream alteration activities qualify for approval under PGP-10, many minimal impact projects can be approved under this joint permit agreement".

On page VI-37, the Permittee discusses how the proposed Emery 2 portal facilities will be constructed in an unnamed ephemeral tributary to Quitchupah Creek (watershed of less than 1 square mile). The Permittee submitted a joint permit application to the Utah Division of Water Rights and the U.S. Army Corps of Engineers for the proposed disturbance of the ephemeral wash. A PGP-10 permit was obtained by the Permittee and provided in Appendix VI-20. Additionally, the Permittee provided an e-mail sent on September 26th, 2016 from Mike Pectol of the U.S. Army Corps of Engineers to Daren Rasmussen of the Utah Division of Water Rights, Stream Alteration. The Stream Alteration Permit was issued on October 11th, 2016 by the State of Utah Division of Water Rights (No. 16-94-02SA) and expires on October 11th, 2018.

schriste

Prime Farmland

Analysis:

The Emery 2 application meets the requirements of Prime Farmland.

Chapter VII Appendix VII-5 Emery 2 Soil Survey contains a letter of non-prime farmland in Appendix A. This letter only pertains to the soil surveyed for Emery 2 development. This letter is signed by Leland Sasser and dated January 8, 2010.

Panel development is shown on Plate IV-2, Underground Operations Plan. This map shows panel development under Alluvial Valley Floor Areas 2 & 3 shown on Chap XI, Plate XI-1, Alluvial Valley Floor Along Upper Quitcupah Creek. AVF Areas 2 & 3 were determined to be subject to the protection requirements of an alluvial valley floor (R645-302-322.250). These AVF Areas are also designated Prime Farmland by the State Soil Survey Staff and are mapped as such in Utah Agricultural Experiment Station Research Report No. 76, Important Farmlands of Parts of Carbon, Emery Grand and Sevier Counties. Plate VIII-1 shows the vegetation and land use. Plate XI-1 shows the active flood irrigated areas East and West of highway 10.

Updated Plate V-5 shows the stream buffer zone and AVF buffer zone within the lease area, both east and west of SR10. This plate indicates that there is no flood irrigation South of the stream, but there is flood irrigation North of the stream in the mining area.

pburton

Hydro Baseline Information

Analysis:

The amendment meets the State of Utah R645 requirements for Baseline Information.

The proposed mine expansion is located within the currently approved area of hydrologic evaluation as shown on Plate VI-4, Ground Water Monitoring Well and Surface Water Monitoring Site Location Map. The proposed underground mine workings are contained within this area. As a result, the historic and current hydrologic monitoring data are applicable in characterizing the ground and surface water systems both within and adjacent to the proposed mine expansion.

The proposed mine expansion is located south of the existing underground mine workings with the associated surface facilities located approximately ¼ mile southwest of the current Emery Deep mine's surface facilities.

The Permittee has collected surface water monitoring data at locations both above and below the confluence of Christiansen Wash and Quitcupah Creek. Surface water monitoring location SWMS-3 is located below the confluence of these two drainages and has been monitored quarterly since 1989. Surface Water monitoring location SWMS-4 is located on Quitcupah Creek above the confluence with Christiansen Wash. Quarterly monitoring data has been collected at this site since 1989. Additionally, surface water monitoring location SWMS-5 (located on Christiansen Wash above the confluence with Quitcupah Creek) has been monitored quarterly since 1989.

A small unnamed channel is located within the proposed surface disturbance. Approximately 1,500 linear feet of the channel will be covered by a constructed pad in the bottom of the canyon. The unnamed channel drains a watershed of approximately 1/3 of a square mile and is tributary to Quitcupah Creek. The unnamed channel enters Quitcupah Creek approximately 1,500 downstream of the confluence with Christiansen Wash. The amendment provides a characterization of the unnamed channel in Appendix VI-22, Baseline Investigation of Unnamed Ephemeral Wash Affected by Emery 2 Surface Facilities (drainage report). The drainage report was prepared by JBR Environmental Consultants Inc. (the consultants).

In evaluating the nature of the unnamed channel, the consultant evaluated topographic mapping, the local geology and groundwater information, aerial photography and the published soil survey of the area. Topographic mapping was utilized to delineate the contributing watershed area. The geologic and aforementioned groundwater data was utilized to evaluate the potential of surface and groundwater interaction. Aerial photography was utilized to evaluate the presence/absence of riparian vegetation. The soil survey was used to evaluate the potential presence of hydric soils. Additionally, the consultant performed a thorough field survey of the entire drainage.

The report documents that the unnamed channel "has no diversions, irrigation, or mining related flow contributions, or other channel modifications". Additionally, it was determined that the channel and associated watershed area does not contain water rights to either ground or surface water.

In 1979 and 1980, a comprehensive spring and seep survey was conducted within one mile of the currently approved Emery Deep Mine permit boundary (including the unnamed channel). No seeps and springs were identified during that survey

within the unnamed channel or its contributing watershed. Groundwater data collected from monitoring well AA as well as the numerous other monitoring wells historically and actively monitored provides information as to the groundwater characteristics in the proposed mine expansion area as well as within the permit and adjacent area. Groundwater in the Emery Deep Mine area is confined within three zones, known as the upper, middle and lower Ferron Sandstone. Historically, the potentiometric surface of these sandstone units has been above the ground surface over much of the area. However, the overlying Mancos Shale prevent the groundwater from discharging to the surface in the majority of the permit and adjacent area, including the proposed mine expansion. As indicated above, the lack of any identifiable springs and seeps in the area of the proposed mine expansion would indicate that the unnamed channel does not receive recharge from groundwater sources, but rather only produces flow during precipitation events and snow melt during the spring.

Additionally, the Natural Resources Conservation Service soil survey of 2009 indicates that the water table in and adjacent to the unnamed channel is more than 200 centimeters below ground surface and that there are no hydric soils present along the channel indicative of a groundwater source. The Permittee hired Long Resource Consultants in the fall of 2009 to conduct an Order II soil survey of the proposed mine expansion area. This detailed soil survey confirmed the absence of any hydric soils along the unnamed channel.

The vegetation present within and adjacent to the proposed mine expansion is typical of the general area of the Emery Deep Mine: pinyon-juniper and desert shrub communities. The density of these vegetative communities is sparse primarily due to the soil type, exposed bedrock and climate of the area. The climate in the area is characterized as semiarid to arid with an average annual precipitation rate of 7 to 8 inches. Variability of rainfall has been documented with years of much higher than average precipitation but also with periods of drought in which less than one inch of precipitation have been recorded.

The contributing watershed to the unnamed channel is small (less than 250 acres). With such a small contributing watershed and the semi-arid to arid climate, it's clear that sustained streamflow cannot be supported from direct precipitation/snow melt alone. Sustained flow would have to thus be supported by groundwater that is recharged from outside the watershed boundary.

The aforementioned data and reports strongly support the characterization of the unnamed channel as ephemeral in nature.

Ground water monitoring well AA provides abundant baseline information. Monitoring well AA has four completions with screened intervals within the Blue Gate Shale (AA-B), the Lower Ferron Sandstone (AA-L), the Middle Ferron Sandstone (AA-M) and the Upper Ferron Sandstone (AA-U). Historical data from all four of these well completions dates back to 1980. The wells were monitored quarterly from 1993 until 2012. Monitoring of these wells was curtailed in 2012 due to lack of any mining activity. However, the numerous years of quarterly data provide ample baseline information to characterize the ground water systems in the aforementioned geologic units. The Permittee has again begun quarterly monitoring of these wells. Monitoring well AA is located directly above the proposed mine workings.

The data from monitoring well AA as well as from monitoring well Muddy #1 indicate that the water levels in the upper Ferron Sandstone has remained essentially unchanged for several years. The data from these two wells indicates that the potentiometric surface within the Upper Ferron Sandstone is located at approximately 5,890 feet at the location of the Emery No. 2 Mine portal. This elevation is approximately 40' below the planned elevation of the mine floor at the portal.

Numerical and analytical groundwater modeling was conducted in order to assess the probable hydrologic consequences of mining in the permit area, including the proposed mine expansion. A discussion of the modeling is provided in Section VI.2.8 of the MRP.

schriste

Probable Hydrologic Consequences Determination

Analysis:

The amendment meets the State of Utah R645 requirements for Probable Hydrologic Consequences Determination (PHC).

The Permittee has revised the Probable Hydrologic Consequences Determination section of the approved MRP (See Section VI.2.8.3). The mine plan for the expansion area does not anticipate full extraction of the coal accessed by the Emery 2 portal; therefore an evaluation of potential impacts to hydrologic resources as the result of planned subsidence is not applicable at this time. If and when the Permittee determines that secondary mining (i.e. planned subsidence) is to be conducted, a re-evaluation of the PHC will be required. The proposed mine expansion is located within the area that has previously been evaluated for hydrologic resources (See Plate VI-4, Ground Water Monitoring Well and Surface Water Monitoring Site Location Map).

Coal in the Emery Deep Mine and proposed expansion is located in the Ferron Sandstone Member (upper, middle and lower units) of the Mancos Shale. As the mine encounters ground water, the flow patterns within the Ferron Sandstone are altered. Ongoing water monitoring has shown significant declines in several monitoring wells completed primarily within the Upper Ferron Sandstone. In order to evaluate the extent of drawdown as a result of mining activity in the Ferron Sandstone, the Permittee has performed several analyses including a mass balance approach model, MODFLO modeling analyses as was the Hantush equation which assumes the Ferron Sandstone aquifer to be homogenous, isotropic and pumped at a constant rate.

Based upon the hydrogeologic analyses and data presented in Chapter VI, it's clear that mining activity within the Ferron Sandstone produces a decline in water level and alters flow direction. However, the modeling results and supporting data provided indicate that post-mining water levels will gradually return to pre-mining conditions once pumping of the underground mine workings cease. It follows that as groundwater levels return to approximate pre-mining elevations, the pre-mining flow directions will also be re-established.

Impacts to surface water quantity and quality as a result of mining activity in the immediate area of the proposed expansion area are considered to be minimal. The nature of the unnamed wash in which the Emery No. 2 Mine facility is to be constructed is ephemeral and as such only flows sporadically in response to local, high-intensity precipitation events. The surface drainage system for the proposed expansion has been designed to prevent impacts to hydrologic resources by utilizing a storm water conveyance system that includes berms, catch basins, culverts, ditches, swales and sedimentation ponds. The diversion ditches will route runoff from the disturbed area to existing sedimentation pond 3. Pond 3 is permitted as an outfall under the State of Utah Division of Water Quality's Utah Pollutant Discharge Elimination System Permit (#UT0022616). Additionally, the drainage features of the conveyance system meet the design standards of the State of Utah R645 coal mining rules. The drainage system has been designed to prevent additional suspended solids from entering the downgradient undisturbed drainage.

The Permittee identifies several options by which they may obtain the water necessary to initiate mining activity. On page VI-21, the amendment states, "Until sufficient groundwater is encountered underground, this operational water will be obtained from a temporary right to divert water from Quitchupah Creek, by leasing water from a user with an existing right on Quitchupah Creek, by purchasing municipal water from the Town of Emery (under the arrangement through which the mine currently purchases water for potable use and fire suppression), or by utilizing water from Emery Mine Borehole #1 (water right number 94-285)." The amendment further indicates that "The applicant will use no water associated with the Emery 2 operations unless it has a right to use that water." Another option identified is that the Permittee could purchase water from the Town of Emery. The mine currently purchases water from the Town of Emery for potable use and fire suppression. Yet another option would be to utilize an existing water right held by the Permittee.

The previous technical analyses (Task ID #5299 and #5350) identified a deficiency relative to the proposed water to be utilized in conducting the underground mining operations. The Permittee was directed to provide documentation that water rights have been obtained to facilitate the mining operation. The Permittee provided the Division with an Order of the State Engineer that approves a temporary change application for water right number 94-1178. The temporary change application revises the point of diversion and place of use for this water right. The water right identifies 0.5 cubic feet per second (cfs) or 166.6 acre-feet (af). The water had been utilized for irrigation. The temporary change application revises the use to "year-round mining purposes". The place of use has been changed to all or portions of Sections 30, 31, 32 and 33, T22S, R6E.

The amendment discusses water right 94-285. Upon review of the State of Utah Division of Water Rights (DWri) database, 94-285 was found to be in good standing. The DWri information identifies three points of diversion associated with this water right located directly adjacent to the existing surface facilities. Additionally, the water right identifies an approved volume of 5.0 cubic feet per second (cfs).

Plate IV-2, UG Operations Plan depicts mining activity occurring in areas where alluvial valley floors (AVF) have been previously identified within the approved Mining and Reclamation Plan (MRP) in Chapter XI. A previous technical analysis (Task ID #5299 and #5350) identified a deficiency relative to AVF's in the proposed mine plan area. The Permittee was directed to revise the amendment to address whether the potential for the mining activity, as depicted on Plate IV-2, could interrupt, discontinue or preclude farming on the identified AVF's shown on Plate XI-1, Alluvial Valley Floor and in Chapter XI.

On page VI-31, the Permittee has added a discussion of potential AVF impacts. The discussion references Chapter XI of the approved MRP. Chapter XI, Alluvial Valley Floors, identifies and discusses potential impacts to the AVF's identified on Plate XI-1, Alluvial Valley Floor along Upper Quitchupah Creek. As discussed previously, Plate IV-2, UG Operations Plan does depict mining activity beneath the potential alluvial valley floors beginning in the 2nd year of operation. The Permittee is not challenging the areas identified as AVF within the existing MRP. In fact, the areas identified as AVF on

Plate XI-1 have been previously identified for potential mining activity. In Section XI.B.5.C of Chapter XI, the approved MRP explicitly discusses AVF Areas 2 and 3 (See Plate XI-1) the mine plan design considerations required in order to undermine them. Area 1 AVF has been historically undermined and not under consideration with this amendment (See Plate XI-1).

Section XI.B.5.C of the approved MRP discusses how the potential to affect the function AVF areas 2 and 3 would be the result of subsidence of the surface. Subsidence could potentially cause changes in the surface drainage patterns, irrigation networks etc. As a result, the approved MRP discusses the establishment of a buffer zone around the AVF areas depicted on Plate XI-1. Mining within these buffer zones (as shown on Plate V-5, Subsidence Monitoring Points and Buffer Zones) will be conducted according to the established subsidence protection methods discussed in Chapter V Part B.

Chapter V Part B, page 27 discusses how the Permittee intends to prevent subsidence from affecting Quitchupah Creek, Christiansen Wash and the alluvial valley floor area on the west side of the adjacent area (Refer to Plate V-5). The approved MRP continues, "There will be no full extraction within the designated buffer zones." The current amendment does not contemplate planned subsidence as the mine plan calls for room and pillar mining only. However, the Permittee discusses in the amendment that pillar dimensions within the AVF buffer zones will be sized large enough to have a factor of safety of at least 1.75 in order to prevent any subsidence from occurring should second mining be conducted. It should be noted, that in order for second mining (i.e. planned subsidence to occur), the Permittee would be required to amend the MRP accordingly.

Plate IV-2, UG Operations Plan depicts the undermining of Quitchupah Creek. Chapter V, page 26 of the MRP discusses undermining of Quitchupah Creek assuming full extraction mining. As the amendment does not identify second mining (i.e. planned subsidence) as their mining method, the discussion on page 26 of Chapter V does not apply. Given that second mining is not being proposed at this time with this amendment, the probability of subsidence or some type of catastrophic failure of the support pillars underlying Quitchupah Creek is considered minimal.

schriste

Maps Surface and Subsurface Manmade Features

Analysis:

The amendment now meets the State of Utah R645 requirements for preexisting Surface and Subsurface Manmade features maps.

The amendment now meets the requirements of R645-301-521.123 as the Permittee included narrative describing the Jeep Trail which is called out on several plates, e.g. Plate V-2. The amendment meets the requirement of R645-301-521.122 as it includes a drawing or plate that clearly calls out the existing surface and subsurface man made features within, passing through, or passing over the permit area. R645-301-521.120 through-521.125 requires maps to clearly show existing surface and subsurface facilities. The proposed additional 29 acres is located southwest of the current main facility operations and no new additional existing structures are located within the expanded buffer area. An existing jeep trail is shown on Plate V-1 and V-2 along the top of the plateau that crosses into the proposed permit area. The Permittee provided a narrative in Chapter 2 page 18 detailing basic information regarding the jeep trail called out on various Plates. The Permittee will control access to the mine and the jeep trail will not be replaced upon the cessation of mining operations.

cparker

Operation Plan

Mining Operations and Facilities

Analysis:

The amendment meets all the State of Utah R645 requirements for Mining Operations and Facilities.

The amendment narrative in Chapter IV meets the requirements of R645-301-523, -526, and 528 by including anticipated annual and total production of coal by tonnage, method of coal mining, engineering techniques, and major equipment to be used for all aspects of those operations proposed to be conducted during the life in regards to Emery 2 within the narrative. The Emery 2 mine will consist of a 6 or 7 entry main system. The mine is planned to production 1.4 million tons per year with three continuous miner sections.

The amendment narrative in Chapter II pages 17d through 17i meets the requirements of R645-301-523, -526, and 528 by including a description of the mining operation. The amendment includes the phase II of the existing Emery operations that

includes an additional 29 acres for the new portal area via a boxcut, road, and conveyor system. Of the new additional 29 acres the Permittee states that only 10.3 acres will be disturbed by mining operations. The amendment includes the addition of several mining operations facilities: Conveyor 2 expanded, Conveyor 1, Boxcut three entry portals, Undisturbed culvert UC-1, Undisturbed culvert UC-2, 100,000 gallon water tank, ventilation shaft, powerlines, and access roads. All facilities can be seen on Plate II-1. Support facilities such as the powerlines and water tanks are discussed in detail under Support Facilities Technical Analysis. Review of the conveyor system is located under the Other Transportation Technical Analysis.

The proposed Emery 2 box cut portals will be a three entry designed similar to the 4th East box cut portals. The majority of the fill excavated during the development of the box cut will be used as fill to establish grade for the support system for the conveyors and roads. Excess material from the boxcut will be stockpiled for reclamation, approximately 89,000 CY. Narrative details that the stockpile will be located at the site of the Coal Stockpile area on Plate II-1. The portals will be accessed by a ramp with a 10% grade from the surface. Each of the three entries will be eight feet high by 14 feet wide and driven on 45 foot centers. The undisturbed drainage will be diverted around and under the new facilities by culvert UC-1 and UC-2 for 1560 feet to Quitchupah Creek, map codes e10 and e11 respectively on Plate II-1. A 16 foot ventilation shaft developed through raise-bore, is proposed to be located west of the Emery 2 portals boxcut to be used for mine ventilation. The shaft will be approximately 120 feet in depth and have the previous 4th east portal ventilation fan and housing constructed over the shaft. Four 4-inc boreholes will be installed near the ventilation shaft to provide access for the water and power to the mine. Disturbed drained from around the facilities at the Emery 2 portal area will report to Pond 3.

cparker

Relocation or Use of Public Roads

Analysis:

The amendment meets the State of Utah R645 requirements for the Relocation or Use of Public Roads.

The amendment meets the requirements of R645-301-521.133 due to information detailing the jeep trail called on Plate V-2 is a private road along the top of the plateau that crosses into the proposed permit area. The Permittee provided a narrative in the MRP the detailing basic information regarding the jeep trail called out on various Plates. The Permittee will control access to the mine and not reestablish the jeep trail upon the cessation of mining operations.

cparker

Air Pollution Control Plan

Analysis:

The amendment meets the Air Pollution Control Plan requirements of the State of Utah R645 rules.

R645-301-420, -422 require that coal mining and reclamation operations will be conducted in compliance with the requirements of the Clean Air Act and any other applicable Utah or federal statutes and regulations containing air quality standards. Additionally, the amendment must contain a description of coordination and compliance efforts which have been undertaken by the applicant with the Utah Division of Air Quality.

Chapter X of the approved Mining and Reclamation Plan (MRP) contains the air quality information for the Emery Deep Mine. The amendment does not provide any information as to the revised Approval Order (AO) or the coordination/compliance efforts which have been undertaken.

The previous technical analyses (Task ID #5299 and #5350) identified a deficiency relative to the Air Pollution Control Plan. The Permittee was directed to revise Chapter X, Part C: Air Quality to reflect the mine expansion. Chapter X Part C, Appendix X.C-2 (Air Permit Approval Order) has been revised with the approved Modification to Approval Order DAQE-AN0229006 for the proposed mine expansion at Emery No. 2. The Approval Order was issued by the Division of Air Quality on December 19th, 2016.

schriste

Coal Recovery

Analysis:

The amendment meets the State of Utah R645 requirements for Coal Recovery.

The amendment now meets the requirements of R645-301-522 due to a discussion of the measures to be used to maximize the use and conservation of the coal resources in regards to the new mine workings associated with Emery 2. Chapter IV was amended to include the Emery 2 expansion to mine the same portion of the reserve that were intended to be mined from the Emery main portals and the 4th east portals. Approximately 8,500 tons of coal will be excavated from the portal area during portal development. The Permittee in their response to the Division's Technical Analysis and Findings of Task 5299 stated that mining will not occur in the Federal Coal Lease U-5287 until 2019. The Permittee committed to initiate the R2P2 modification in January 2017 and to provide the Division with documentation of the modified R2P2 by December 31, 2017. The description will assure that coal mining and reclamation operations are conducted so as to maximize the utilization and conservation of the coal, while utilizing the best technology currently available to maintain environmental integrity, so that re-affecting the land in the future through coal mining and reclamation operations is minimized. The 4th East Portal permit area will remain in idle status and continue to be used as storage areas, potential future access to coal reserves, and possible additional ventilation openings.

cparker

Topsoil and Subsoil

Analysis:

The Emery 2 application meets the requirements of Soils Operation Plan, R645-301-230.

The application meets the requirements of R645-301-232.710, which allows an exception to the rule of timing soil salvage prior to blasting taking place due to stability and safety concerns with the sandstone cliffs above the soil removal area. The plan describes blasting the canyon rim before topsoil salvage. The blasting plan is provided in Appendix IV-12. After the site is stabilized, the topsoil and subsoil will be salvaged as described in App. VII-5, pp 58-59.

Chapter II, p. 23 describes stockpile construction with slopes of 2h:1v and surface roughening. Page II-23 describes cryptogam collection and re-establishment on topsoil stockpiles. Chapter IV p. 8c contradicts the information on p. II-23 regarding topsoil pile maximum slope. The Division recommends that topsoil pile slopes do not exceed 2h:1v to enable seed to stick and plants to establish. Chap. IV p. 8c describes the placement of topsoil into topsoil stockpile T-2. This stockpile is shown on Plate II-1.

Appendix VII-5 Tables 17, 18, 19 and 20 document the potential for salvaging 7,992 CY of topsoil and 11,600 CY subsoil from the 10.3 acre Emery 2 disturbed area. As previously mentioned the topsoil will be placed in topsoil stockpile T-2 (p. IV-8c). Or in topsoil or subsoil berms on the stable bench above the disturbed area. Topsoil/subsoil will not be used for berms in the switchback section of road Section 7 (shown on Plate IV-8c). The depth of placement will be determined with an as-built survey. The side slopes are described as at a maximum angle of 1.5h:1v (Ch IV p.8c). (A 2h:1v slope is preferred, if there is room.) The stockpiles will be bermed and seeded.

Two reclamation seed mixes are provided in the Vegetation Survey Appendix VIII-8. One is for the greasewood community and one for all other vegetation communities to be disturbed (Pinyon-Juniper and Shadscale and previously disturbed sites). The seed mixes are quite similar and both have overlap with the seed mix developed for the Emery Mine Test Areas.

Excess overburden cut from the box cut/conveyor construction (114,350 CY) will be stored at the Waste Rock Disposal Site (WRDS) during operations and will be handled as described on page IV-39b.. Excess cut from the airshaft (893 bcy X 1.3 swell factor = 1,161 CY) will be stored at the WRDS too. Excess cut (topsoil and subsoil) from the Section 7 roadway (4,699 CY) will be stored in berms along the roadway (Chap. IV p. 8c and Plate IV-8c). All topsoil, including that used as berms, will be signed (Chap IV, p. 8c). Designs for the box-cut are found in App. IV-13.

NOTE: Plate II-1A is a hypothetical presentation of a proposed preparation plant (Chap II p. 20 and 23) which is not bonded for and which is not under review at the present time. The plate raises soils handling concerns which have been identified and discussed with the Permittee (personal communication with John Gefferth on January 25, 2017). The Division will conduct a review of this plate prior to bonding the preparation plant.

pburton

Road System Other Transportation Facilities

Analysis:

The amendment meets the State of Utah R645 requirements for Road Systems and Other Transportation Facilities relative

to hydrology.

The mine is accessed via public road that is owned and maintained by Emery County. Drainage from this road is the responsibility of Emery County. The roads and associated drainage within the disturbed areas is the responsibility of the Permittee. The design and drainage of these roads is presented in Chapter IV, Appendix IV-7 and Appendix VI-21.

The existing Section 3 Mine Yard Road is proposed to be extended as Sections 5 and 6 to facilitate access to the mine expansion area. The Section 5 and 6 portions of the road are identified in the amendment as primary roads. Plate IV-8a and Plate IV-8b provide the plan, profile and cross-sections for the Section 5 and Section 6 portions of the proposed mine expansion access road. A Section 7 road will also be a primary road that will be utilized to access the ventilation fan and water tank that will be located above the boxcut. Plate IV-8c provides the detailed plan, profile and cross-sectional view for the Section 7 road. The proposed road segments have been designed to control or minimize erosion. All storm water runoff generated from the proposed roads will report to existing Pond 3. The proposed road segments in the mine expansion will be reclaimed once coal mining activity has ended.

Plate VI-11B, Emery Drainage Details provides the design drawings for: riprap apron detail, typical cash basin, silt fence and wattle detail as well as the culvert inlet/outlet details.

schriste

Hydrologic General

Analysis:

The amendment meets the State of Utah R645 General Hydrologic Information requirements.

Appendix VI-21, Emery 2 Surface Facility Hydrologic Design Calculations provides the design calculations and supporting narrative as to how the mine expansion will safely convey storm water runoff and prevent additional contributions of suspended solids to adjacent drainages.

The Permittee utilized HydroCAD version 10.0 to determine storm water discharge volumes for the area. Curve numbers were determined based on documented vegetation and soil conditions obtained from Mt. Nebo Scientific and Long Resource Consultants respectively. Design storm magnitudes were determined from the National Oceanic and Atmospheric Administration (NOAA) ATLAS 14, Point Precipitation Frequency Estimates web page. The resulting data is provided in Attachment A of Appendix XI-21.

The previous technical reviews (Task ID #5299 and #5350) identified a deficiency of the Hydrologic Information provided in the amendment relative to the drainage design for the proposed mine expansion. The Permittee was directed to provide clarification in the form of a narrative that described the drainage design considerations as well as revise discrepancies with the various figures that depicted the proposed drainage network (i.e. Plate XI-10E and Plate II-1).

Upon review of this most recent amendment, the Permittee has revised Plate XI-10E and Plate II-1. Plate XI-10E provides a much more clear and concise depiction of the proposed drainage network to be constructed and utilized in the Emery No. 2 mine. Additionally, the clarifying narrative discussed above was added in Section 3.4 of Appendix VI-21 (page 5) as well as on Plate VI-10E.

schriste

Hydrologic Ground Water Monitoring

Analysis:

The amendment meets the State of Utah R645 requirements for Groundwater Monitoring.

The previous technical analysis (Task ID #5299 and #5350) identified a deficiency. The Permittee was directed to revise Table VI-17 to show that monitoring will be conducted in all four completions of monitoring well AA. Table VI-17 had shown that monitoring well "AA" would be monitored quarterly for water level. However; there are four completions within monitoring well AA that must be monitored (e.g. AA-B, AA-U, AA-M and AA-L). The Permittee was directed to revise Table VI-17 to show that quarterly monitoring will be conducted in all four completions within monitoring well AA (i.e. AA-B, AA-U, AA-M and AA-L). The completions within the Bluegate Shale (AA-B), Upper Ferron Sandstone (AA-U), Middle Ferron Sandstone (AA-M) and Lower Ferron Sandstone (AA-L) must be monitored quarterly. The Permittee made the revisions to Table VI-17 to show monitoring in all four completions.

Hydro Surface Water Monitoring

Analysis:

The amendment meets the State of Utah R645 requirements for Surface Water Monitoring.

The previous technical analysis (Task ID #5299 and #5350) identified a deficiency. The Permittee was directed to revise Table VI-17 to show that monitoring would be conducted on two additional surface water monitoring points on the unnamed channel within the proposed expansion area. The Permittee made the required revisions.

schriste

Hydrologic Water Quality Standards

Analysis:

The amendment meets the State of Utah R645 requirements for Water-Quality Standards and Effluent Limitations.

The proposed drainage system for the mine expansion utilizes existing sedimentation Pond 003. Pond 003 is currently permitted under a Utah Division of Water Quality Utah Pollution Discharge Elimination System permit (UPDES #UT0022616).

schriste

Hydrologic Diversion Perennial and Intermitten

Analysis:

The amendment meets the State of Utah R645 requirements for Diversions: Perennial and Intermittent Streams.

Based on the design information and supporting calculations provided in Appendix VI-21, all diversions have been designed comply with R645-301-742.323. The disturbed berms (DB-1 thru DB-3), disturbed culvert (DC-1), disturbed drainage ditches (DD-1 thru DD-5) have been designed to safely convey the storm water runoff generated from a 10-year, 6-hour event.

Appendix VI-22, Baseline Investigation of Unnamed Ephemeral Wash Affected by Emery 2 Surface Facilities characterizes the unnamed drainage that lies within the proposed mine expansion area as ephemeral and draining an area less than one mile. However; the culverts that will route undisturbed drainage around the mine expansion (UC-1 and UC-2) have been designed to safely convey the runoff generated from a 100-year, 6-hour event, which exceeds the required design storm standard. Additionally, undisturbed berms have been designed to safely convey a 100-year, 6-hour precipitation event. In both instances, the required performance standard for these types of diversions has been exceeded.

A previous technical analysis directed the Permittee to revise Plate VI-11B, Emery 2 Drainage Details. The Permittee was directed to clarify the culverts that the depicted culvert inlet/outlet trash rack detail applies to on Plate VI-11B. Plate VI-11B has been revised accordingly.

schriste

Hydrologic Diversion Misc. Flows

Analysis:

The amendment meets the State of Utah R645 requirements for Diversions: Miscellaneous Flows.

The Permittee proposes the use of a swale to control runoff in the north-east extent of the mine expansion (DS-1). DS-1 was designed utilizing a 10-year, 6-hour precipitation event which exceeds the required design storm event of a 2-year, 6-hour event per R645-301-742.333.

The amendment proposes to utilize a swale to route disturbed storm water runoff to Pond 3. Based on the design information provided in Appendix VI-21, the swale will be 70' long. The previous technical review (Task ID #5299 and #5350) identified a deficiency relative to Diversions of Miscellaneous flows. The Permittee was directed to revise the amendment with a detailed design drawing for how the proposed swale (DS-1) located in the north-east portion of the mine expansion will be constructed. A cross section of DS-1 is provided on Plate VI-11B, Emery 2 Drainage Details. The cross

section depicts the roadway sections on either side of the swale where it ties into the south-east inlet of sediment pond 3.

schriste

Hydrologic Stream Buffer Zones

Analysis:

The amendment meets the State of Utah R645 requirements for Stream Buffer Zones.

R645-301-731.600 requires that no land within 100 feet of a perennial stream or an intermittent stream or an ephemeral stream that drains a watershed of at least one square mile will be disturbed unless the Division specifically authorizes coal mining and reclamation operations to occur closer to, or through such a stream.

The proposed mine expansion will occur within an unnamed drainage tributary to Quitcupah Creek. Appendix VI-22, Baseline Investigation of Unnamed Ephemeral Wash identifies the drainage as ephemeral. Additionally, the unnamed drainage drains a watershed of less than one square mile. The Permittee is proposing to utilize an undisturbed by-pass culvert to safely convey the flow from the unnamed channel around the proposed expansion area. The by-pass culvert has been designed per the requirements of R645-301-742.300. The Permittee has also obtained a Stream Alteration Permit from the State of Utah Division of Water Rights (See Appendix VI-20, Stream Alteration Permit for the Emery 2 Surface Facility).

Plate VI-4, Ground Water Monitoring Well and Surface Water Monitoring Site Location Map depicts the water monitoring locations established above and below the proposed mine expansion area.

Plate VI-10E, Surface Drainage Control Map depicts the locations of each water diversion, sediment pond, culvert etc.

schriste

Hydrologic Siltation General

Analysis:

The amendment meets the State of Utah R645 requirements for siltation structures.

On page VI-42 of the amendment, the Permittee discusses the utilization of siltation structures. The amendment states, "Temporary siltation structures such as silt fences and straw wattles will be installed during construction activities in areas that do not drain to an existing siltation structure...". R645-301-742.212 requires that siltation structures for an area will be "constructed before beginning any coal mining and reclamation operations...".

The previous technical analysis (Task ID #5299 and #5350) directed the Permittee to provide a commitment in Sections VI.3.2.1 and VI.4.2.2 that siltation structures for areas that do not report to an existing siltation structure (i.e. sediment pond) will be installed prior to beginning construction of the mine expansion. The Permittee has provided a commitment in both of the aforementioned sections that "Temporary siltation structures will be installed in all areas that do not report to a sedimentation pond prior to beginning construction of the Emery 2 mine expansion area."

schriste

Hydrologic Impoundments

Analysis:

The amendment meets the State of Utah R645 requirements for Siltation Structures: Sedimentation Ponds.

The drainage conveyance system will route and/or pump all disturbed drainage to existing Sediment Pond 3. Sediment Pond 3 was originally designed and approved to contain the runoff resulting from a 100-year, 6-hour event from a smaller drainage area that what will not contribute to the pond following the mine expansion. The Permittee has re-designed Pond 3 to contain and safely treat the runoff generated from a 10-year, 24-hour precipitation event as required per R645-301-742.220, and 221.33. As Pond 3 currently collects runoff only from the coal stockpile area, the pond will be enlarged to collect and treat runoff from the mine expansion area.

The stage-storage capacity for Pond 3 is provided in Table 3 of Appendix VI-21. On page 5 of Appendix VI-21, the Permittee states, "Sediment will be removed when 60% of the design sediment capacity (11,380 cubic feet) has accumulated (an elevation of approximately 5,905.15')."

The previous technical analyses (Task ID #5299 and #5350) identified a deficiency relative to maintenance of Sediment Pond 3. The Permittee was directed to revise the design information of Sediment Pond 3 to include the installation of a sediment marker within the pond. Plate VI-15B, Pond 3 Modifications was to be revised to show a sediment clean-out marker to be installed that will identify the 60% design sediment capacity. The sediment marker will facilitate the determination of when cleaning operations of Sediment Pond 3 must be initiated by a simple visual inspection. Plate VI-15B has been modified to clearly depict a sediment clean-out marker in both the cross-sectional views as well as the plan view.

The amendment provides the design drawing of Sediment Pond 3 (Pond 3) on Plate VI-15B, Pond 3 Modifications. Upon review of the Plate VI-15B, the Permittee is proposing to utilize a single 42" CMP with an open top to serve as the primary spillway structure for Pond 3 and a 12" CHDPE culvert to act as a secondary spillway.

A previous technical analysis identified a deficiency relative to the single spillway construction (42" CMP versus an open channel of non-erodible construction). The Permittee was directed to revise the construction of Pond 3. As previously indicated, the Permittee has added an additional culvert to act as a "secondary spillway". The secondary spillway is identified on Plates VI-15B as a 12" diameter CHDPE culvert. The revised plate depicts the inlet and outlet elevations of the proposed secondary spillway as 5,910' and 5,908.8' respectively with a 2% minimum grade. A debris gate will be installed on the inlet to minimize the potential for plugging. As R645-301-743.130 requires either a combination of principal and emergency spillways or a single spillway of non-erodible construction, the proposed modifications to Pond 3 meet the requirements as the pond will essentially have three spillways (two within the primary spillway and the proposed secondary spillway). The design information on Plate VI-15B identifies Quitchupah Creek as where the impounded water discharging from the Primary Spillway will report.

Plate VI-10E, Surface Drainage Control Map identifies a sump to be constructed in the portal pad area of the box cut. The sump will serve to collect surface runoff that reports from the high point of the portal access road and the boxcut itself. A previous technical analysis identified a deficiency relative to the construction and maintenance of the sump feature. In Chapter VI, Appendix VI-21, the Permittee discusses the sump. On page 6 of Appendix VI-21, the Permittee indicates that the sump will be constructed by sloping the area in the southwest extent of the box-cut/portal pad area to the south and/or southwest at a minimum slope of 1%. The accumulated sediment will be removed from the sump when deemed necessary by the operator to maintain safety. A pump will be placed in the sump to direct the water into disturbed drainage ditch DD-2.

schriste

Explosives General

Analysis:

The amendment meets the State of Utah R645 requirements for a Preblasting Survey.

The amendment now meets the requirements of R645-301-524.300 by including a copy of the preblast survey notification within the application and copies of waivers of landowners within one half mile of the permit area. The appendix includes a copy of the preblast survey notification to be sent to all parties identified on Plate I-1 and copies of the notifications the signed waivers of preblast surveys to meet the requirements R645-301-524.300 preblast survey described in the permit application. The majority of the notification were sent on December 8, 2016.

cparker

Maps Affected Area

Analysis:

The amendment meets the State of Utah R645-301-521.100 requirements for Affected Area Maps.

The amendment now meets the requirements of R645-301-521.100 through-521.130 by updating all the relevant maps for the entire area shown on the mine plan as detailed on Plate II-1A Proposed Structures and Facilities Main Portal Area, Plate III-4 Main Portal Disturbance Areas, Plate III-8 Main Portal Area Post mining Topography, Plate V-1 Pre-subsidence Survey Structures and utilities, Plate V-2 Pre-subsidence Survey roadways, Plate V-3 Pre-subsidence Survey hydrology, Plate V-4 Pre-subsidence Survey veg, Plate V-5 Subsidence monitoring points and buffer zones, and Plate VI-6 Historic and Plan mining sequence.

cparker

Maps Facilities

Analysis:

The amendment meets the State of Utah R645 requirements for Mining Facilities Maps.

The previous technical analysis (Task ID #5299 and #5350) had identified deficiencies relative to the maps/plates that depicted the proposed drainage network for the Emery No. 2 Mine. Discrepancies were identified between Plate II-1, Structure and Facilities Main Portal Area and Plate VI-10E, Surface Drainage Control Map. Plate II-1 had identified a "Sediment Basin No. 1" in the southern portion of the boxcut/portal pad area; however, Plate VI-10E did not depict this drainage feature.

Upon discussions with the Permittee, the drainage plan will utilize a sump and/or catch basin to collect runoff that reports to the boxcut before pumping the captured flow into Pond 3 via disturbed drainage ditch DD-2. The Permittee has rectified the discrepancies between Plate II-1 and Plate VI-10E as to the location and nature of the hydrologic feature that is intended for collection of storm water runoff that reports to the boxcut prior to it being pumped to Pond 3.

Plate VI-10E depicts the drainage control measures to be constructed/implemented at the Emery No. 2 Mine. Flow directions have been provided so as to more readily discern the routing of runoff at the site.

schriste

Maps Facilities

Analysis:

The amendment meets the State of Utah R645 requirements Mining Facilities Maps.

The amendment now meets the requirements of R645-301-521.120 through-521.125 which require maps to clearly show existing surface and subsurface facilities. The amendment now contains the engineered plates showing operations plan view and cross sections for new box cut portals similar to Plate IV-3b-1 and Plate IV-3b-2. The volumes describe in Table IV-1A can be verified with contained within the R&M engineering consultant's report, e.g. Drawing C-5.

cparker

Reclamation Plan

Approximate Original Contour Restoration

Analysis:

The amendment meets the State of Utah R645 requirements for Approximate Original Contour Restoration relative to hydrology.

In Appendix VI-21, Emery 2 Surface Facility Hydrologic Design Calculations, the Permittee commits to removing all temporary hydrologic structures (i.e. sedimentation ponds, diversions) and restoring the natural drainage pattern of the proposed expansion area to its pre-mining condition.

schriste

Backfill and Grading General

Analysis:

The amendment meets the State of Utah R645 requirements for Backfill and Grading.

The amendment now meets the general requirements of R645-301-553 by detailing a general backfill and grading plan that details how disturbed areas will be backfilled and graded to achieve the approximate original contour, eliminate all highwalls, spoil piles, and depressions, and achieve a postmining slope that does not exceed either the angle of repose or such lesser slope as is necessary to achieve a long term static safety factor of 1.3 and to prevent slides, minimize erosion and water pollution both on and off the site, and support the approved postmining land use. Specific The ephemeral channel will be reconstructed in its approximate original location and grade. The portion of the reconstructed channel running over the backfilled boxcut area (channel RD-1) will be backfilled to the appropriate grade and lined with a rubber or other impervious

liner placed within the channel to reduce the likely hood of catastrophic failure. Riprap will be installed in the channel as shown on Plate III-11. Channel RD-2 will be constructed with a filter layer underlying riprap as shown on Plate III-10. The switch back section of Primary haul road will be graded to AOC meeting the Chapter III E.1 and III F.1, and Chapter VII appendix VII-5 standards. The Permittee included detailed soil analysis in Appendix C to classify the reclamation soils and Appendix D to show the Slide geometry analysis to establish a reclaimed slope with a stability safety factor at least greater than 1.7.

cparker

Mine Openings

Analysis:

The amendment now meets the State of Utah R645 requirements for Mine Openings.

The requirements of R645-301-513.500, R645-301-529, R645-301-532.100 and R645-301-551 are now met within the amendment as there is updated narrative detailing the timing and sequence of reclamation on page 3 of Chapter III that states the 4th East Portals were sealed in 2016 and have ongoing reclamation. The Permittee is not currently conducting any grading reclamation activities at the 4th east portals and current operations include abandonment of the area for the development of the new Emery 3 portals. To meet R645-301-532.100 regulations the Permittee included a more detailed reclamation timing sequence in Chapter III Section III.A.2. that includes reducing the disturbed area to the smallest practicable at any one time during mining operations through the reclamation of the 4th east portals area.

The timing of the sealing of the Emery 2 portals and associated ventilation shaft and boreholes at the time of final reclamation is detailed in Chapter III page 15d.

cparker

Topsoil and Subsoil

Analysis:

Analysis:

The application meets the requirements of R645-301-231.300 testing plan for evaluating the results of topsoil handling and reclamation procedures because Appendix VII-5 pages 60 and 61 discuss the details of the soil testing plan prior to salvage. Table 23 identifies the number of soil sample locations. Samples will be analyzed for pH, EC, SAR and Exchangeable Sodium Percentage and texture. Field measurements of pH and EC will also be conducted and used to separate fair from poor quality soils (according to the Division's 2008 Topsoil and Overburden Guidelines). Successful reclamation of sodic soils has not been easily accomplished and is under investigation (Chap III p. 4a). Soils with a poor quality rating will not be salvaged.

The application meets the requirements of R645-301-232.500 subsoil segregation, because, if suitable, excess spoil may be used to enhance reclamation as described in Chapter III, P. 15d-g.

The reclamation plan for the ephemeral channel is described in Chap. III, p. 21a. Subsoil will be replaced over 8.2 acres to a depth of 6.96 inches and topsoil to a depth of 10 inches for a total depth of approximately 17 inches. Chapter III p. 4a provides a timetable for reclamation which includes respreading berm material and respreading and roughening topsoil and the seeding/mulching of topsoil in the temporary diversion. Use of large rock in the reclaimed ephemeral stream is described in Chap III, p. 15d.

Chap III, p. 15d provides information on portal closure and backfill. Table III-1A, p. 15g and 15h provide the cut fill calculations, which indicate that 44,700 CY excess spoil will remain at the Waste rock Disposal site. The spoil will be sampled as described on p. III-15d prior to its use in final reclamation. Unsuitable material will remain at the waste rock disposal site for final reclamation.

App. VI-21 provides the reclamation design for the channel. Table 2 describes the trapezoidal design of RD-1 and RD-2. Maximum velocity of the channels is 6.34 fps and 8.07 fps, respectively. RD-1 will be 2 ft deep X 4 ft wide with riprap d50 = 6 inches, above an impermeable liner. RD-2 will have the same dimensions with riprap d50 = 12 inches above a geotextile liner. Suitable excess spoil may be used in final reclamation (p. III-15d) to create pockets of deeper subsoil that are described on Chap III, p. 21b or a six inch layer could be placed over the trapezoidal channel (at its lowest gradients) prior to seeding.

pburton

Road System Reclamation

Analysis:

The amendment now meets the State of Utah R645 requirements for Reclamation of Roads.

The requirements of R645-301-534 are now met within the amendment as the Permittee provide durther clarification on the Jeep trail called out on Plate V-2 will simply be reclaimed. The amendment includes an updated Chapter III reclamation time table and detailed narrative showing the removal of all mining related roads, structures, and fills. The reclamation plan includes the restoration of the ephemeral channel to be filled in to access the Emery 2 portal area. A total of 10.3 acres will be reclaimed in relation to the emery 2 expansion. The amendment meets the R645-301-512.200 , -553.110 through -553.150, and -302-270 due to the proposed reclamation grading plan that reestablishes the approximate original contour (AOC). Plate III-11 shows the reclamation hydrology to restore AOC. The appropriate USACE and Utah Stream alteration permit are contained in Appendix VI-20.

cparker

Hydrological Information Reclamation Plan

Analysis:

The amendment meets the State of Utah R645 requirements for Hydrologic Reclamation Plan.

Appendix VI-21, Emery 2 Surface Facility Hydrologic Design Calculations provides a detailed discussion of the reclamation plan relative to hydrology in Chapter 4. Sedimentation pond 3, as well as all berms, catch basins, culverts, ditches and swales associated with the drainage control system of the proposed mine expansion will be removed during reclamation. The Permittee states on page 6 of Chapter 4 of Appendix VI-21, "Natural Drainage patterns will be restored to their approximate original configuration during reclamation."

The peak flow calculations utilized to design the reclaimed channels associated with the mine expansion are provided in Attachment C and summarized in Table 2 of Appendix VI-21. Plate III-11, Emery 2 Reclamation Hydrology depicts the re-established reclaimed channels following final reclamation. The final reclaimed runoff conveyance system is comprised of two open channels (RD-1 and RD-2). The riprap sizing calculations for these channels is provided in Attachment C and summarized in Table 2 of Appendix VI-21.

The Permittee proposes that both reclaimed channels will be designed with a bottom width of four feet, a depth of two feet and side slopes of 2H: 1V. The median riprap diameter will be six inches in channel RD-1 and twelve inches in channel RD-2. RD-2 is located in a steeper portion of the canyon.

The Permittee proposes to install an impermeable liner beneath the riprap in the RD-1 channel to prevent seepage into the deep fill that will be placed in the portal box cut. The riprap in channel RD-2 will be underlain with a non-woven geotextile fabric.

The previous technical analysis (Task ID #5299 and #5350) identified a deficiency. The Permittee was directed to provide a profile map of the proposed re-establishment of the un-named drainage. The profile was requested in order to evaluate how the reclaimed drainage will be tied into Quitcupah Creek and further evaluate if additional measures may be needed to insure stability of the reclaimed channel. The Permittee provided Plate III-11, Emery 2 Reclamation Hydrology.

Plate III-11 provides a profile of the reclaimed channel, cross-sectional views as well as a delineation of the watersheds that were analyzed in calculating the design storm events.

schriste

Stabilization of Surface Areas

Analysis:

Analysis:

The application meets the requirements for R645-301-244 Soil stabilization, because the site will be surface roughened, seeded and mulched. The final reclamation mixes are presented in App. VIII-8 for the Emery 2 disturbed area. Mulch is described in VII.C.7 and Chap III p. 22. In VIII.C.7 several possibilities are stated for mulch, one of which is the use of rock as mulch to armor the soil surface on slopes steeper than 5h:1v. Road section 7 is one such area.

Maps Bonded Area

Analysis:

The amendment now meets the State of Utah R645 requirements for Bonded Area.

The requirements of R645-301-800 are now met within the amendment as the bonded area map was updated on Plate I-1 with the half mile buffer boundary extends beyond the surface ownership information. The Permittee shall show all relevant surface ownership information within the half mile buffer.

cparker

Maps Reclamation Final Surface Configuration

Analysis:

The amendment meets the State of Utah R645 requirements for Final Surface Configuration Maps relative to Hydrology.

Plate III-11, Emery 2 Reclamation Hydrology depicts the re-established natural drainage pattern and final topography of the unnamed ephemeral channel in the proposed mine expansion area. Additionally, the plate provides a typical cross-sectional view of the reclaimed channel in sections RD-1 and RD-2.

The previous technical analysis (Task ID #5299 and #5350) identified a deficiency. The Permittee was directed to provide a profile map of the proposed re-establishment of the un-named drainage. The profile was requested in order to evaluate how the reclaimed drainage will be tied into Quitchupah Creek and further evaluate if additional measures may be needed to insure stability of the reclaimed channel. The Permittee provided Plate III-11, Emery 2 Reclamation Hydrology.

Plate III-11 provides a profile of the reclaimed channel, cross-sectional views as well as a delineation of the watersheds that were analyzed in calculating the design storm events.

schriste

Bonding Determination of Amount

Analysis:

The Emery, Phase II Additional Permit Boundary, Task #5362 meets the State of Utah R645 requirements for Bonding Determination of Amount.

The Emery, Phase II Additional Permit Boundary, Task #5362 meets the State of Utah R645 requirements for Bonding Determination of Amount. The Permittee submitted updated reclamation costs using 2016 RSMeans Heavy Construction Cost Data catalog. The three categories re-calculated in this new estimate, and their sub-totals are as follows:

Demo.....	\$475,380.00
Earth.....	\$2,530,371.00
Reveg.....	\$577,553.00

The Total to reclaim all disturbed areas associated with the Emery Mine is

Total Direct Cost.....	\$3,583,303.00
Total Indirect Cost	\$960,326.00
Reclamation Cost Escalated.....	\$4,596,392.00

Total minimum bond amount required is\$4,596,000.00

Current Bond as of 7/14/2016 is.....\$3,808,000.00

The Permittee is currently under bonded and will need to increase the bond.

Minimum increase amount:.....\$788,000.00

There was an adding error of \$3692 encountered on The4thEastPortal16 earth sheet but it is immaterial (.000804%) to the bonding amount. With this amendment and an increased of a minimum of \$788,000.00 bond Emery will be sufficiently bonded.

The Amendment is recommended for approval pending Permittee submitting clean copies with the earth sheet correction and a minimum bond amount of \$4,596,000.00 posted.

bwiser

Special Categories

Operations Alluvial Essential Hydrologic Functions

Analysis:

The amendment meets the State of Utah Requirements for Essential Hydrologic Functions.

Plate IV-2, UG Operations Plan depicts mining activity occurring in areas where alluvial valley floors (AVF) have been previously identified within the approved Mining and Reclamation Plan (MRP) in Chapter XI. Plate XI-1, Alluvial Valley Floor Along Upper Quitchupah Creek depicts three alluvial valley floor (AVF) areas in the area of the proposed mining as depicted on Plate IV-2.

Area 1 AVF has historically been undermined and is not under consideration/review with this amendment. Areas 2 and 3 are located either directly adjacent to or directly over areas designated for mining activity in years two and three of the Emery No. 2 Mine. Area 2 is an AVF identified as actively flood irrigated by water diverted from Muddy Creek. Area 3 is an AVF identified as actively flood irrigated from Quitchupah Creek Water. It should be noted that the AVF areas identified on Plate XI-1 are located within the previously established area for hydrologic evaluation (i.e. the area has previously been evaluated for mining activity).

Section XI.B.5.C of the approved MRP discusses how the potential to affect the function AVF areas 2 and 3 would be the result of subsidence of the surface. Subsidence could potentially cause changes in the surface drainage patterns, irrigation networks etc. As a result, the approved MRP discusses the establishment of a buffer zone around the AVF areas depicted on Plate XI-1. Mining within these buffer zones (as shown on Plate V-5, Subsidence Monitoring Points and Buffer Zones) will be conducted according to the established subsidence protection methods discussed in Chapter V Part B.

Chapter V Part B, page 27 discusses how the Permittee "intends to prevent subsidence from affecting Quitchupah Creek, Christiansen Wash and the alluvial valley floor area on the west side of the adjacent area (Refer to Plate V-5)". The approved MRP continues, "There will be no full extraction within the designated buffer zones." The current amendment does not contemplate planned subsidence as the mine plan calls for first mining only. However; the Permittee discusses in the amendment that pillar dimensions within the AVF buffer zones will be sized large enough to have a factor of safety of at least 1.75 in order to prevent any subsidence from occurring should second mining be conducted. It should be noted, that in order for second mining (i.e. planned subsidence to occur), the Permittee is required to amend the MRP accordingly. Given that second mining is not being proposed at this time with this amendment, the probability of subsidence or some type of catastrophic failure of the support pillars underlying Quitchupah Creek and the identified AVF areas is minimal.

Areas 2 (flood irrigated) utilizes water from Muddy Creek for agricultural activity. The water reports to Area 2 via an irrigation network. Area 3 is flood irrigated utilizing water from Quitchupah Creek. As with Area 2, Area 3's water is delivered via a diversion ditch located approximately two miles west of the area of hydrologic evaluation (See Plate VI-4). In both instances, the water utilized for agriculture is not obtained from within the permit and adjacent area itself, but rather outside of this area and delivered to the AVF areas via irrigation canals.

During the period in which the former Permittee (Consolidation Coal Company, LLC) was conducting secondary mining, surface impacts were reported by area land-owners and the company. In those instances, impacts to irrigation canals/diversions/ditches were reported. The impacts were primarily instances where the grade of the irrigation canals had been compromised as a result of subsidence (i.e. secondary mining). As a result of the subsidence, the irrigation canals would develop segments in which the grade was altered to the extent that flow was impeded and the water could not be delivered to its beneficial use/point of diversion. In those cases, small equipment was mobilized to re-establish the grade of the channels and in some instances bentonite was applied to armor the channel.

The Division finds that the most likely scenario for the mining activity depicted on Plate IV-2 to disrupt, interrupt or diminish the function of the AVF areas identified on Plate XI-1 would be from surface impacts to the irrigation canals during second mining. However; as discussed previously, second mining is not being proposed with this amendment and under no

circumstances would the Permittee be allowed to conduct second mining without first submitting an amendment to the Division for review.

Chapter XI discusses monitoring that will be conducted by the Permittee. On page 7 of Chapter XI, the approved MRP states, "In order to assure that farming operations are not interrupted, discontinued, or precluded, agricultural activities will be informally monitored by mine personnel. If any change in agricultural activities is observed, the operator will investigate the cause and the Division of Oil, Gas and Mining will be notified." If the Permittee determines they want to increase their coal extraction rate and conduct any type of secondary mining that could result in subsidence, they will be required to update their MRP accordingly. All of the subsidence regulations outlined in R645-301-500 would need to be addressed for the areas identified on Plate IV-2 including a pre-subsidence survey. For example Plate V-3, Presubsidence Survey: Hydrology depicts all of the irrigation ditches located within the hydrologic evaluation area. As the plate was revised in May of 2010, the Permittee would need to re-establish/verify the locations of the irrigation canals that facilitate agricultural function/production of the AVF areas identified on Plate XI-1. Additionally, the Permittee would need to revise their subsidence monitoring commitments. Historically, when the previous Permittee conducted secondary mining, the Division required regular site reconnaissance of the areas being undermined with reports and photo documentation submitted to the Division on a monthly basis. The field reconnaissance/walk-overs of the subsided areas and subsequent report generation and submission to the Division was effective in facilitating communication, addressing potential impacts due to subsidence and identifying mitigation measures. The same process would be employed in the AVF areas if and when the Permittee determines that their mining activity would expand beyond room and pillar techniques.

The Division finds that the proposed first mining depicted on Plate IV-2 has been designed to prevent material damage or interruption of the essential hydrologic function of the previously discussed AVF areas.

schriste

Operations Alluvial Protection of Agricultural

Analysis:

The application does not meet the requirements of environmental monitoring for designated Alluvial Valley Floors, R645-302-322.250 and R645-302-324.300. Prior to approval, Bronco Coal will update App XI-3, p. 8 to state that Bronco will monitor irrigation ditches in T 22 S, R 6 E, Sections 30, 31 and 32, one year prior to and two years after mining beneath the pasturelands shown on Plates 1 and Plate VIII-1. (Appendix V-3 provides a 1980 pre-subsidence survey of irrigation ditches and ponds. This survey may be updated as necessary.)

Upon receipt of the above and with two conditions on the Emery 2 permit, the application will meet the requirements of R645-302-322.350 mining beneath an Alluvial Valley Floor.

Condition 1. Mining beneath Quitcupah stream buffer zone (shown on Plate V-5) and the Alluvial Valley Floor will be room and pillar mining with no full extraction and no partial extraction, as described in Section IV.A.1.

Condition 2. Within two years, the coal seam elevations and coal seam thickness isopachs will be completed on plates V-17 through 25 for the extent of the mining area shown on Plate IV-2, Underground Operations Plan; and prior to mining beneath the stream buffer zone the updated plates V-17 through 25 will be approved for incorporation into the MRP.

The Division determined that mining operation may cause, or presents a risk of causing, material damage to the quantity or quality of Quitcupah surface irrigation water that supplies the alluvial valley floor (R645-302-322.230) in T 22 s, R 6 E, Sections 30, 31 and 32. Per R645-302-322.250, the Division has determined the following specific environmental monitoring is required to measure compliance with R645-302--324 during and after coal mining and reclamation operations: Bronco Coal will monitor irrigation ditches in T 22 s, R 6 E, Sections 30, 31 and 32, one year prior to and two years after mining beneath the pasturelands shown on Plates 1 and Plate VIII-1.

Documentation of AVF:

Alluvial Valley Floor Areas described Chap XI were determined to be subject to the protection requirements of an alluvial valley floor R645-302-322.250 in 1990. Specially managed flood irrigated lands are shown in T 22 s, R 6 E, Sections 19, 20, 21, 29, 30, 31, and 32 on Plate 1 of Chapter XI.

The lands flood irrigated with water diverted from Muddy Creek and those flood irrigated with Quitcupah Creek water are differentiated on Plate XI-1, Alluvial Valley Floor Along Upper Quitcupah Creek. (Plate XI-1 also shows flood irrigated lands that were grandfathered into the mine plan and those that were excluded from mining under State lease, which was relinquished.)

The three AVF Areas described on Plate XI-1 are also designated Prime Farmland by the State Soil Survey Staff and are

mapped as such in Utah Agricultural Experiment Station Research Report No. 76, Important Farmlands of Parts of Carbon, Emery Grand and Sevier Counties. These three AVF areas are also shown as pastureland on Plate VIII-1 Vegetation and Land Use. Appendix V-3 provides a 1980 pre-subsidence survey of irrigation ditches and ponds.

Analysis of Effect:

Panel development in the Emery 2 lease expansion area will occur beneath Quitchupah Creek flood irrigated lands (Area 3 AVF lands) in T 22S, R 6 E, Sections 32 and 31 within the first year of mining as shown on Plate IV-2, Underground Operations Plan. In year 2, Mining will continue under Area 3 AVF lands South of Quitchupah Creek in Section 30 and will advance beneath the Quitchupah Creek Buffer Zone to Muddy Creek flood irrigated lands (Area 2 AVF lands) North of Quitchupah Creek in Sections 30 and 19. Plate IV-2 shows panel development under active flood irrigated areas both East and West of highway 10, in Section 19 (refer to Plate 1 for the irrigated areas). The application will meet the requirements of Application Contents for Operations Affecting Designated Alluvial Valley Floors, when, in accordance with R645-302-322.250 and R645-302-324.300, the Permittee updates the existing monitoring commitment found in Appendix XI-3 p. 8 to include monitoring of the surface above existing mining.

The MRP describes room and pillar mining with partial extraction technique during secondary extraction, leaving the roof intact (MRP p. IV-2), which is in compliance with R645-301-525.311 and R645-301-525.313, but which is not adequate for protection of Quitchupah Creek. Recently updated Plate V-5, Subsidence Monitoring Points and Buffer Zones (updated January 2017), shows the stream buffer zone and AVF buffer zone within the lease area, both east and west of SR10. (Plate V-5 should include an AVF buffer zone in Section 31 where Plate 1 shows flood irrigation. Plate V-5 should reflect the pattern of flood irrigation and pasturelands in Sections 30, 31, and 32 as that shown on Plate 1 and Plate VIII-1.) The stratigraphic cross section shown on Confidential Plate V-7 shows 200 - 300 ft of cover between Quitchupah Creek and the coal seam. The application will meet the requirements of Application Contents for Operations Affecting Designated Alluvial Valley Floors, because mining beneath Quitchupah stream buffer zone (shown on Plate V-5) and the Alluvial Valley Floor will be room and pillar mining with no full extraction and no partial extraction, as described in Condition 1, on the permit for Emery 2.

The isopach and coal seam thickness maps were requested prior to mining beneath the stream to provide documentation of the depth of overburden and extraction thickness. The Permittee is aware of this requirement and has agreed to provide the information on or at the mid-term review (Incoming 01312017.5362.pdf, e-page 10). Of particular interest are the elevation and thickness isopachs shown on Plates V-19 through V-22, which illustrate the seams to be mined in the proposed five year mining plan. The application will meet the requirements of Application Contents for Operations Affecting Designated Alluvial Valley Floors, when prior to mining beneath the stream buffer zone, the coal seam elevations and coal seam thickness isopachs on plates V-17 through 25 for the extent of the mining area shown on Plate IV-2, Underground Operations Plan are completed and approved for incorporation into the MRP, Condition 2 on the Emery 2 permit.

Deficiencies Details:

The application does not meet the requirements of environmental monitoring for designated Alluvial Valley Floors. Prior to approval, please provide the following.

R645-302-322.250 and R645-302-324.300, Bronco Coal will update App XI-3, p. 8 to state that Bronco will monitor irrigation ditches in T 22 S, R 6 E, Sections 30, 31 and 32, one year prior to and two years after mining beneath the pasturelands shown on Plates 1 and Plate VIII-1. (Appendix V-3 provides a 1980 pre-subsidence survey of irrigation ditches and ponds. This survey may be updated as necessary.)

Upon receipt of the above and with two conditions on the Emery 2 permit, the application will meet the requirements of R645-302-322.350 mining beneath an Alluvial Valley Floor.

Condition 1. Mining beneath Quitchupah stream buffer zone (shown on Plate V-5) and the Alluvial Valley Floor will be room and pillar mining with no full extraction and no partial extraction, as described in Section IV.A.1.

Condition 2. Within two years, the coal seam elevations and coal seam thickness isopachs will be completed on plates V-17 through 25 for the extent of the mining area shown on Plate IV-2, Underground Operations Plan; and prior to mining beneath the stream buffer zone the updated plates V-17 through 25 will be approved for incorporation into the MRP.

pburton

FEDERAL

PERMIT

April 6, 2016
Revised February 8, 2017

C/015/0015

**STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801**

This permit, C/015/0015, is issued for the state of Utah by the Utah Division of Oil, Gas and Mining (Division) to:

**Bronco Utah Operations, LLC
P.O. Box 527
Emery, Utah 84522
(801) 286-2301**

for the Emery Deep Mine. A surety performance bond in the amount of \$3,510,000 payable to the State of Utah, Division of Oil, Gas and Mining and the United States Department of Interior, Office of Surface Mining Reclamation and Enforcement is filed with the Division. Consolidation Coal Company is the lessee of federal coal lease U-5287 and the lessee of certain fee-owned parcels in Sections 29 and 30, Township 22 South, Range 6 East, SLBM.

Sec. 1 STATUTES AND REGULATIONS - This permit is issued pursuant to the Utah Coal Mining and Reclamation Act of 1979, Utah Code Annotated (UCA) 40-10-1 et seq, hereafter referred to as the Act.

Sec. 2 PERMIT AREA - The permittee is authorized to conduct surface disturbing activities only as described in the approved Mining and Reclamation Plan and within areas covered by the Performance Bond which are within the described permit area at the Emery Deep Mine, situated in the state of Utah, Emery County, and located as follows:

Township 22 South, Range 6 East, SLBM

Section 27: SE1/4NW1/4, N1/2NE1/4SW1/4, W1/2SW1/4NE1/4,
consisting of East Portal

Section 30: part of E1/2NE1/4 consisting of Borehole Pump No. 3

Section 32: part of NW1/4, NE1/4, E1/2SE1/4 consisting of Main Portal

Section 33: part of NW1/4, NE1/4, N1/2SW1/4 consisting of Main Portal
and Emery 2 Expansion

Sec. 3 AUTHORIZED MINING AREA - The permittee is authorized to conduct underground coal mining and reclamation activities only as described in the

approved Mining and Reclamation Plan and on lands where the "Right-of-Entry" has been acquired. This area includes the area above underground works and areas subject to subsidence and is described as follows:

Township 22 South, Range 6 East, SLBM

- Section 19:** S1/2NE1/4, E1/2SW1/4, and SE1/4;
Section 20: S1/2NE1/4, SE1/4 NW1/4 and S1/2;
Section 21: S1/2N1/2 and S1/2;
Section 22: S1/2, SW1/4NW1/4, portions of the following
E1/2SE1/4NW1/4, SW1/4SE1/4NW1/4, S1/2NW1/4NE1/4,
SW1/4NE1/4, SW1/4SW1/4NE1/4NE1/4, W1/2SE1/4NE1/4,
S1/2NE1/4SE1/4NE1/4, SE1/4SE1/4NE1/4
Section 23: S1/2SW1/4, portions of SW1/4SW1/4NW1/4, NW1/4SW1/4,
NE1/4SW1/4
Section 26: NW1/4 NW1/4
Section 27: W1/2, W1/2NE1/4, NE1/4NE1/4, part of SE1/4NE1/4
Section 28: All
Section 29: All
Section 30: E1/2, E1/2NW1/4, SW1/4NW1/4, N1/2NW1/4SW1/4,
E1/2SW1/4
Section 31: N1/2, W1/2SW1/4, E1/2SE1/4, SW1/4SE1/4
Section 32: All
Section 33: W1/2, NE1/4

This legal description is for the authorized mining area of the Emery Deep Mine. The permittee is authorized to conduct coal mining and reclamation operations connected with mining on the foregoing described property subject to the conditions of the leases, the approved mining plan, including all conditions and all other applicable conditions, laws and regulations.

- Sec. 3 COMPLIANCE** - The permittee will comply with the terms and conditions of the permit, all applicable performance standards and requirements of the State Program.
- Sec. 4 PERMIT TERM** - This permit expires on January 7, 2021.
- Sec. 5 ASSIGNMENT OF PERMIT RIGHTS** - The permit rights may not be transferred, assigned or sold without the approval of the Division Director.

Transfer, assignment or sale of permit rights must be done in accordance with applicable regulations, including but not limited to 30 CFR 740.13{e} and R645-303.

- Sec. 6 RIGHT OF ENTRY** - The permittee shall allow the authorized representative of the Division, including but not limited to inspectors, and representatives of the OSMRE, without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:
- (a) Have the rights of entry provided for in 30 CFR 840.12, R645-400-110, 30 CFR 842.13 and R645-400-220;
 - (b) Be accompanied by private persons for the purpose of conducting an inspection in accordance with R645-400-210 and 30 CFR 842, when the inspection is in response to an alleged violation reported to the Division by the private person.
- Sec. 7 SCOPE OF OPERATIONS** - The permittee shall conduct surface disturbing activities only on those lands specifically designated as within the permit area (in section 2 above) on the maps submitted in the approved plan and approved for the term of the permit and which are subject to the performance bond. All coal mining and reclamation operations are to be conducted within the bounds of the authorized mining area.
- Sec. 8 ENVIRONMENTAL IMPACTS** - The permittee shall minimize any adverse impact to the environment or public health and safety through but not limited to:
- (a) Any accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;
 - (b) Immediate implementation of measures necessary to comply; and
 - (c) Warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.
- Sec. 9 DISPOSAL OF POLLUTANTS** - The permittee shall dispose of solids, sludge, filter backwash or pollutants in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable state or federal law.

- Sec. 10 CONDUCT OF OPERATIONS** - The permittee shall conduct its operations:
- (a) In accordance with the terms of the permit to prevent significant, imminent environmental harm to the health and safety of the public; and
 - (b) Utilizing methods specified as conditions of the permit by DOGM in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program and the Federal Lands Program.
- Sec. 11 EXISTING STRUCTURES** - As applicable, the permittee will comply with R645-301 and R645-302 for compliance, modification, or abandonment of existing structures.
- Sec. 12 RECLAMATION FEE PAYMENTS** - The operator shall pay all reclamation fees required by 30 CFR Part 870 for coal produced under the permit, for sale, transfer or use.
- Sec. 13 AUTHORIZED AGENT** - The permittee shall provide the names, addresses and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.
- Sec. 14 COMPLIANCE WITH OTHER LAWS** - The permittee shall comply with the provisions of the Water Pollution Control Act (33 USC 1151 et seq), and the Clean Air Act (42 USC 7401 et seq), UCA 26-11-1 et seq, and UCA 26-13-1 et seq.
- Sec. 15 PERMIT RENEWAL** - Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.
- Sec. 16 CULTURAL RESOURCES** - If during the course of mining operations, previously unidentified cultural resources are discovered, the permittee shall ensure that the site(s) is not disturbed and shall notify the Division. The Division, after coordination with OSMRE, shall inform the permittee of necessary actions required. The permittee shall implement the mitigation measures required by the Division within the time frame specified by the Division.
- Sec. 17 APPEALS** - The permittee shall have the right to appeal as provided for under R645-300.
- Sec. 18 SPECIAL CONDITIONS** - There are special conditions associated with this permitting action, as described in Attachment A.

The above conditions (Secs. 1-18) are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors and subcontractors involved in activities concerning this permit to include these conditions in the contracts between and among them. These conditions may be revised or amended, in writing, by the mutual consent of the Division and the permittee at any time to adjust to changed conditions or to correct an oversight. The Division may amend these conditions at any time without the consent of the permittee in order to make them consistent with any federal or state statutes and any regulations.

THE STATE OF UTAH

By: _____

Date: _____

I certify that I have read, understand and accept the requirements of this permit and any special conditions attached.

Authorized Representative of the Permittee

Date: _____

ATTACHMENT A
Special Conditions

1. Bronco Utah Operations, LLC will submit surface and ground water quality data for the Emery Deep Mine on a quarterly basis in an electronic format through the Electronic Data Input web site, <http://linux3.ogm.utah.gov/cgi-bin/appx-ogm.cgi>
2. Mining beneath Quitchupah stream buffer zone (shown on Plate V-5) and the Alluvial Valley Floor will be room and pillar mining with no full extraction and no partial extraction, as described in Section IV.A.1 of the MRP.
3. Within two years of the issuance of this permit, the coal seam elevations and coal seam thickness isopachs will be completed on plates V-17 through 25 for the extent of the mining area shown on Plate IV-2, Underground Operations Plan; and prior to mining beneath the stream buffer zone the updated plates V-17 through 25 will be approved for incorporation into the MRP.